The Soybean Digest

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SOYBEANS AND WORLD TRADE

BEAN STORAGE IN MANCHURIA

COMMERCIAL SOY FIBER NOW

INOCULATION AND PROTEIN

Official Publication

OF

THE AMERICAN SOYBEAN ASSOCIATION

VOLUME 4 • NUMBER 3 JANUARY • 1944

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It's not the acres you plant but the bushels you harvest that will win your part in the battle of beans. Let not the losses of 1942 happen again!

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The best way for everybody, as a rule, is to "swap work." If you hire a combine, arrange to pay back by doing work of equal value for its owner on his farm. Take your tractor and plow, corn picker, or manure spreader and help him as he helps you.

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Your Case dealer stands ready to serve you in many ways. His wide acquaintance will help in arranging to "swap" work. He will do all he can to supply you a new or used combine. To the full extent of his time and help he will furnish you skilled repair service and advice on operation of all kinds of farm machines. He knows the fair custom rates for work with farm equipment under your local conditions. All he asks is that you let him know your needs as far ahead as possible, especially orders for renewal parts and overhaul jobs. Write us for free book "Shortcuts" showing ways to get more done with limited labor. J. I. Case Co., Racine, Wis., or nearest branch.

CASE

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SAVE MORE SCRAP
BUY MORE BONDS

THE Soybean Digest

GEO. M. STRAYER, Editor — KENT PELLETT, Managing Editor

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THE AMERICAN SOYBEAN ASSOCIATION

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PROTEIN MESS

IN SPITE of the most frantic efforts by feed distributors and governmental officials, the protein distribution programs have failed miserably here in the Midwest area. There have been too many attempts at appeasement — too many fingers in the pie — too much talking and too little acting — too many men without the fortitude to stand up against pressure — and too many sales programs demanding too much protein.

The result? A farmer needs 10 sacks of soybean oil meal and gets two sacks. He frantically tries every possible source of supply. He gets perhaps one-half of his needs. Yet he can buy plenty of mixed feeds if he wants them.

The Midwest farmer likes to make up his own mind. He does not like to be forced to use mixed feeds. He likes to convince himself of their value if he is to use them. He rebels when he has no alternative. He should have his choice.

The AAA and the CCC have stepped into the picture. They are attempting to do now what should have been done earlier. Again they are late. We shall see if they are too late. The criticism had become so severe that there was even talk of reducing the quantity of soy flour manufactured in order to make more meal for livestock feed!!

Out of this chaos must be brought order — and soon. Persons charged with the responsibility of administration of the protein orders must be given power to act. If they are not given that power chaos will continue to reign and resignations will start to flow.

THE AMERICAN FARMER IN TIME OF WAR MUST HAVE PROTEINS DISTRIBUTED TO HIM IN AN ORDERLY MANNER. HE IS NOT GETTING THEM.

PUSH DISEASE BILL

THERE has been introduced before Congress a bill which would appropriate funds for the development of soybean disease studies. Very little interest or action has come forth on it to date. Yet it is something extremely vital.

There was a time when it was thought no insects or diseases prevalent in this country would touch soybeans. We now know differently. Diseases are beginning to take tremendous tolls in the national soybean production figures. Insects are attacking the plants. Each year the damage becomes greater. Yet we know practically nothing about them.

NOW — before the damage becomes too great — is the time to start learning about these pests. NOW is the time when studies concerning life cycles and resistance should be started. NOW is the time for Congress to appropriate a small fund for research work in order that we may learn to protect what has already become one of America's greatest crops.

We will keep you informed. Your senator and congressman will want to know how you stand on the bill. Later — when the bill has progressed farther — you will want to contact your representatives concerning it.

TOO LITTLE AND TOO LATE?

THE YEAR 1944 has arrived. Farmers are making their cropping plans for the year. Acreages of each crop are being allotted. Seed is being purchased. Work is being outlined. Even though we seem in the middle of the throes of winter, spring is again just around the corner.

The AAA has announced the national and state goals on soybean production for 1944. The national figure is 20 percent above last year. State goals go as much as 47 percent above previous figures. The nation at war needs more edible oils and more proteins.

Yet there has been no indication of the 1944 base price on the soybean crop. Farmers have figured out for themselves that it is going to take more than patriotic appeals to make them grow soybeans this year. During the past 12 months they have had experience with corn shortages. They know that it is more profitable to grow corn and feed it to livestock than it is to produce soybeans as a cash crop. They have figured out that for many of them it was a bit foolish to produce soybeans in 1943.

Look at the logic of the picture. Seventy bushels of corn per acre can be produced on land which will grow 25 bushels of soybeans. Seventy bushels of corn at $1.16 means $81.20 per acre. Twenty-five bushels of soybeans at $1.80 means $47.00 per acre. Is it worth $34.00 per acre to be patriotic?

IF THE 1944 SOYBEAN GOALS ARE TO BE MET TWO THINGS ARE NECESSARY IMMEDIATELY. THEY ARE:

1. Immediate announcement of the 1944 base price on soybeans.
2. A base price of at least two and one-half times the price, per bushel, of commercial corn.

Unless these two things are announced NOW the 1944 acreage of soybeans may be LESS, rather than more than the 1943 figure.

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SOYBEAN GROWERS and the MEAT INSTITUTE

(An Editorial)

RECENTLY an increasing number of members of the American Soybean Association have inquired as to the aims of the American Meat Institute. The Corn Belt knows that its enormous soybean crop has found an important permanent outlet in soya foods. Naturally, then, growers are greatly disturbed when there seems to be an effort to obstruct progress in the consumption of soya foods.

Leading government nutritional authorities have praised with enthusiasm the protein value of soy flour. The government has been a large scale buyer of soy flour, soy grits and soy flakes for use in lend-lease, in the domestic program, and for consumption by our fighting men.

The American Meat Institute is an organization of meat packers with a rather large membership, with principal sources of income reportedly from the large packers. Right now Norman Draper appears to be official spokesman for the Institute. Whether Mr. Draper speaks for the entire membership may be a matter of debate, for many packers themselves have been users of soy flour over a long period of time.

National Provisioner is the official organ of the meat packing interests. A recent issue of that paper contains a lengthy story embodying Mr. Draper's views which would seem to express a fear of soya food products by the meat industry. The article, discussing a contemplated meat advertising campaign on a large scale, begins: "The ammunition is ready. The strategy is shaped. . . . The big campaign is about to begin." Then it tells of the "smashing educational drive" the American Meat Institute will conduct in the next 12 months over airways, in editorial and news-columns and in medical journals.

It seems strange to Corn Belt farmers that during a period of wartime rationing the American Meat Institute should decide to open such an ambitious and costly "educational" campaign. Many feel that certain packers in the Institute may be over-fearful of the new and superior soy protein which is to be added to the American diet.

RESEMBLANCE

Merit of soy flour as a superb protein food product cannot be denied. Curiously, soy protein so resembles meat protein that years were spent in developing scientific methods which would determine the soy flour content of meat products, methods now available to the Bureau of Animal Industry. It would seem, therefore, that soy and meat proteins serve the same general purpose, although the soy industry has carefully avoided any disparaging mention of meat; on the contrary the industry has gone out of the way to say a good word for meat as a protein food.

The public, and the government itself, believe that the problem of protein shortage in the American diet, even in peace-times, has at last been solved by the development of soya foods. To attempt to obstruct this natural development, particularly in a wartime period, is a dangerous venture.

The article quoting Mr. Draper comments that the Meat Institute "for many months has recognized the growing menace of meat 'substitute' promotions, and has fought them vigorously whenever it was believed that such promotions contained misleading information." Some farmers who have tied their future to the soybean are rather puzzled that the Meat Institute should suddenly turn crusader for the public good.

COMPLAINTS

"Soybeans and enriched bread," says the article, "are two of the protein foods against which the Institute has lodged complaints for the nature of their advertising." It is difficult to understand this point. Well informed government authorities have claimed that white bread should carry more food value to the American public, and particularly to the laboring classes and those in the lowest brackets. Soy protein is credited with great possibilities in that field. Surely the Meat Institute would not deny the workingman a loaf of bread with additional food value. The Meat Institute inadvertently is sounding a testimonial to the superior merits of soy protein, if fair competition is feared.

In the last analysis, this determined opposition to the progress of soy protein, and the expenditure of huge sums, ostensibly to promote meat, borders a bit on the ridiculous. Those in charge of the Meat Institute do not seem to have thought the matter out very clearly. They should bear in mind that meat packers themselves have been large users of soy flour for many years; at least one of the largest packers is a manufacturer and seller, as well as a user, of soy flour. A second large packer is preparing to produce soy flour and it is reported his engineers have been busy for months. Still other packers have been studying the greater use of soy flour. Here are realistic businessmen who move with the tide of commerce rather than stubbornly bucking this natural tide.

All facts considered, it is puzzling how Mr. Draper can justify to his entire membership the expenditure of very large sums of money, either to promote meat consumption in this war period of serious shortage, or to indirectly oppose continued public acceptance of soy flour. On the surface at least the position seems unwise. Doubtless if soy is to be opposed, directly or indirectly, the Meat Institute will stir old fires in the Corn Belt that might better be permitted to die out. It is difficult to believe that the rank and file of meat packers want Mr. Draper to use their advertising funds to undermine soya products under the guise of promoting meat sales.

Farmers who produce the soybean crop, which now ranks so high among the cash crops of the nation, will not be oppressed or imposed upon by any selfish competitive interests, or by any public officials influenced by outside interests. When the showdown comes, if such is necessary, the Corn Belt farmers will have the support of agriculture in every state of the Union.

We at Spencer Kellogg are among the leaders in the development and manufacture of soybean oils, meals and flours. And we are glad to say that our research is constantly improving and increasing the usefulness of soybean products. . . .

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SOYBEANS AFTER THE WAR --- 4

SOYBEANS and WORLD TRADE

By ROBERT M. WALSH

PRODUCTION of soybeans in the United States is now second only to production in China and is perhaps in excess of output in that country. The upward climb in production of soybeans in the United States has been truly spectacular — from 14 million bushels in 1933 to over 200 million bushels in 1943. More will be required in 1944. In 1942 we wrested second place in soybean production from Manchuria. In 1943 we were about on a par with pre-war China, which for many years was the world's largest producer and consumer of soybeans. Other countries lag far behind in output of this once lowly crop.

What are the prospects for American soybeans in the post-war world?

For the short-term the outlook is fairly clear. Until the collapse of the Japanese hold on the South Pacific, demand for soybeans will exceed supplies. The defeat of Germany will release European purchasing power and a desire for adequate feeding. World markets will be scoured for oil-bearing materials, oils and fats, and high-protein animal feedstuffs.

European demands for fats and oils and for oilcake and oilmeal after the defeat of Germany will not, of course, be supplied wholly from American soybeans or from other American oil-bearing materials and fats. Argentine and Indian flaxseed, sunflower seed from Latin America, palm oil and palm kernels from West Africa, copra from the free islands of the South Pacific, whale oil from the Antarctic, and other oil-bearing materials and oils still available in remote areas will be drawn upon to restore food consumption in Europe to something approximating its pre-war level and to essay a rebuilding of livestock herds.

STRINGENT SUPPLY

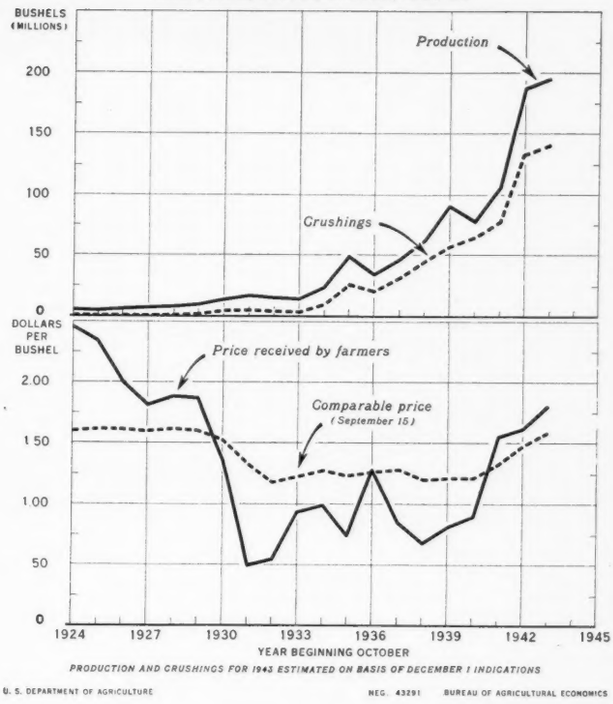
No one can say when the period of stringent supply following the war in Europe will end. The defeat of Japan may mark the turning point. Even then, time will be required to restore the plantations and trading centers of the East Indies, Malaya, and the Philippines, so that supplies of oil-bearing materials — which furnished about three billion pounds of fats annually in the pre-war period — may again be shipped in volume overseas.

In the post-war period proper, following the demobilization of armed men and the reconversion of industry to peace-time pursuits, world production of oil-bearing materials is likely to expand. Expansion will be most marked in low-cost tropical and subtropical areas. Scientifically managed palm and cocoanut plantations are likely to be extended in the Far East and will take deeper root in Africa. New road construction in South America will tap rich resources of babassu nuts and other nuts of the palm species. Whaling activities will be resumed on a wide scale.

Accompanying this expansionist movement, it is expected by many that world industrial production and building activity will be at high levels. It will take several years to replace machinery and transport destroyed by bombing and shell fire, to rebuild cities, and to replenish and perhaps enlarge the stock of manufactured consumer goods. The willingness of the United Nations to cooperate in raising the general standard of living may have a beneficial effect. In addition, certain of the "newer" countries such as Australia and Brazil may enter a period of rapid industrialization.

• *With the United States on an exporting basis for soybeans following the war, growers may have to adjust to a major price decline, says the author. But this may not come until 1947 or 1948. Mr. Walsh is principal agricultural economist in the division of statistical and historical research, U. S. Department of Agriculture.*

SOYBEANS HARVESTED FOR BEANS: PRODUCTION, CRUSHINGS, AND PRICE, UNITED STATES, 1924-43



PRODUCTION AND CRUSHINGS FOR 1943 ESTIMATED ON BASIS OF DECEMBER 1 INDICATIONS

U. S. DEPARTMENT OF AGRICULTURE NEG. 43291 BUREAU OF AGRICULTURAL ECONOMICS

These things will tend to support a high level of demand for fats and oils and for animal feedstuffs. On the less favorable side, there is a possibility of a disorganized world trade because of monetary disturbances, a shortage of means of payment in international exchange, continued high tariff barriers, and perhaps revolutionary conditions in some countries. The ending of the war is no certain guarantee of world prosperity.

Prices of agricultural raw materials have declined after every major war period. Barring fiscal inflation, they probably will do so again. The price of soybeans will not lag far behind the general trend, particularly when Manchurian soybeans again become available in international markets. The movement of soybean prices in the United States will be closely related to price changes in foreign markets, *as the United States probably will be on an exporting basis for soybeans after the war.* But if prices decline, certain of the cost elements in producing soybeans will decline also, so that conditions will not necessarily become unfavorable to a continued high level of soybean production in this country.

LOWER PRICE LEVEL

The principal problem facing soybean growers in the post-war period will be the problem of adjusting to lower prices. Prices received by farmers for soybeans averaged 87 cents per bushel in the 5 years 1935-39. This was a period when world production of oil-bearing materials, and oils and fats, had reached into new high ground. Prices of fats and oils in 1939 were at a very low level, almost as low as in the worst depression years. Prices of high-protein meal was below average. In contrast, prices of fats and oils today are slightly higher than they were in the 1920's and prices of oilcake and meal are the highest in several years. Growers of soybeans are receiving an average price this season of around $1.80 per bushel. But at present levels prices are not nearly so inflated as they were during and shortly after the first World War. *Consequently, if further advances are held within moderate limits the downward adjustment in prices, when it comes, probably will be much less severe than the decline of 1920-21.*

If it is assumed that the war with Japan will not end before 1945, it is possible that a major price decline will not occur before 1947 or 1948. This would be in line with the experience following the last war, when prices advanced for almost two years after the armistice. Basically, that advance rested on a world shortage of consumer goods. If anything, the shortage of consumer goods following the present war will be greater than in the earlier period, and a longer time may be needed to overcome the principal deficits. The longer prices continue high the more difficult the adjustment is likely to be when the decline comes, as producers will tend to acquire more-and-more capital goods — land, machinery, buildings — at high costs during the period of price inflation.

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THE AUTHOR, while on foreign agricultural explorations in the Orient, visited the principal soybean centers of Manchuria in the fall and early winter of 1930 following through from harvest to the storage of the seed at river and railway points. It is thought that in view of the critical shortage of storage space in our own country resulting from a record production of seed, transportation shortage, and a large proportion of elevator space filled, the methods of handling the soybean crop in Manchuria, "The Land of Soybeans," might be of interest to *The Soybean Digest* readers. It is not to be inferred from this article that similar methods may be employed in the United States as it will be noted that conditions in Manchuria are quite different from those prevailing in our own soybean-producing regions.

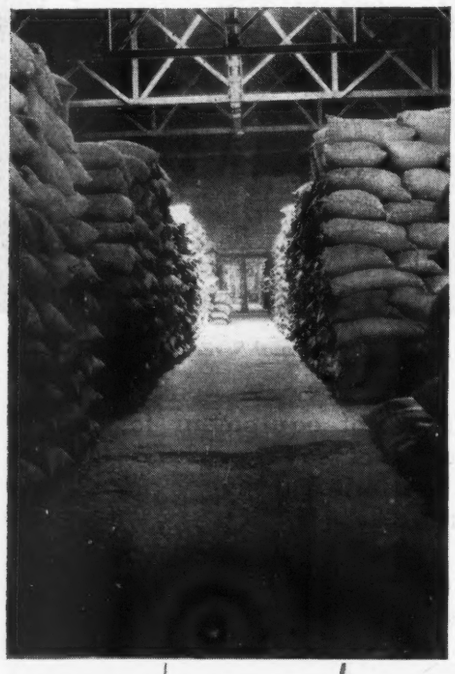
The soybean is the most important agricultural crop in Manchuria, and business circles depend to the greatest extent on the market situation of the soybean and its products, oil and oil cake. Soybeans make up more than one-fourth of the staple crop acreage of Manchuria, the annual production being around 150 million bushels. The soybean is a dominating factor in the economic life of Manchuria as it is the big cash crop of the region, providing fully half of the farm income in northern Manchuria and more than half of the total freight handled by Manchurian railways. The soybean and its products constitute more than 60 percent in value of the entire export trade of Manchuria. From two-thirds to three-fourths of the soybeans are exported.

Osier bins in the storage yard of a [illegible] m

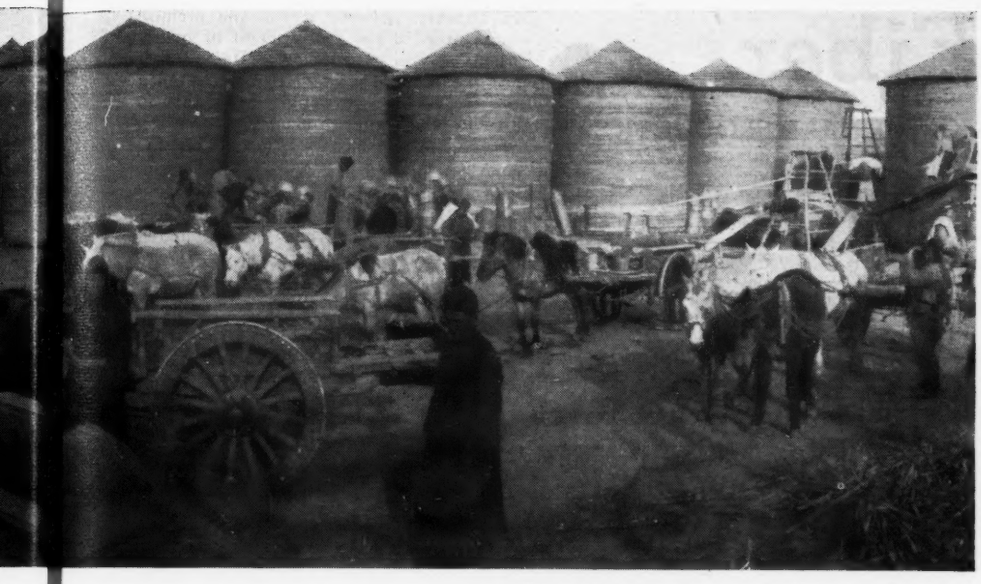
MARKETING AN
BEANS IN

The great movement of soybeans from the farmers' hands to market begins after freezing weather, since the trails across the country are unfit for heavy hauling in the cumbersome two-wheel carts except when the ground and rivers are frozen hard. The farmer threshes his beans by the primitive methods of flailing or having a donkey or horse pull a stone roller over them on a dirt threshing ground. After cleaning, the seed is stored in small bins made of hand-woven grass matting along the side of the threshing ground. When travel conditions permit, the farmer sacks his beans, loads from 8 to 12 sacks upon the cart and starts overland to market. During November and December the cross country trails are alive with long lines of shouting Manchurian farmers in groups of 25 to 75 taking their beans to the nearest rail or river point where the beans are sold to Chinese grain merchants. If the receiving point is on a river, the local dealer may hold the beans until late spring or early summer and then move them by junk or barge to large receiving centers on rivers or to a seaport.

Various methods of storing soybean seed are practiced in the large producing and shipping regions of Manchuria. In North Manchuria, the fall and winter months are comparatively dry, and open storage with little covering on the beans prevails. The beans are placed in bags, each holding 213 pounds, and piled in large ricks. In some instances matting or canvas covers the top and extends about half way down the rick, while in other cases the matting covers the entire rick. It is said that damage is but little as the sacks are carefully watched by the Chinese and when rain or melting snow does dampen the outside sacks they are taken down, opened, and the beans spread out to dry.



Upper: Soybeans stored in warehouse of South Manchurian Railway, Dairen, Manchuria. Corner: Transporting beans by junk. Right: Seed is often stored in small woven grass matting bins at side of the threshing ground.



d of a [illegible]n merchant, Kaiyuan, Manchuria

A[illegible]TORAGE OF MANCHURIA

By W. J. MORSE

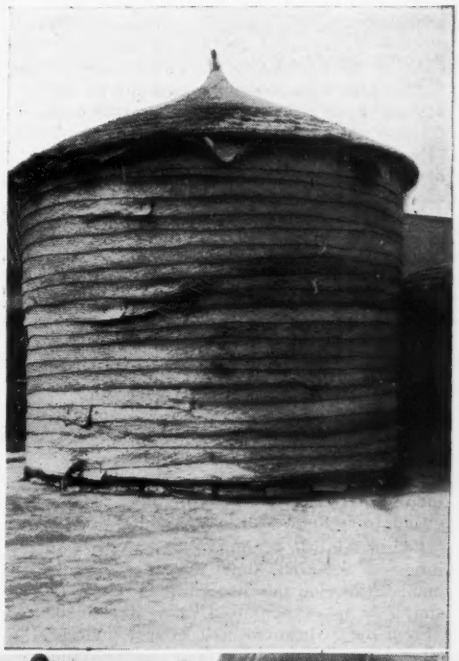
Senior Agronomist, Bureau of Plant Industry, U. S. Department of Agriculture Washington, D. C.

In South Manchuria, there is more or less rain or snow during the winter months and beans are placed in covered storage. Osier bins are used principally by the Chinese grain merchants in this region in the storage of beans, millet, and kaoliang. In the construction of these bins, logs or heavy pieces of timber are placed close together in a circle with a diameter of about 18 feet. A matting of closely-woven kaoliang stalks is then placed over the logs or timber forming the floor of the bin. The wall of the bin is made of strips of rice straw matting about 15 inches wide. As the bin is being filled the strips are gradually wound around until about 20 feet high. The roof of the bin consists of bundles of rice or millet straw overlapping each other like shingles. The average osier bin is said to hold about three carloads of beans, each carload containing 150 sacks. At one large Chinese storage yard (see upper picture) in Kaiyuan there were 80 osier bins filled with new-crop beans and many others in the course of being filled. This storage yard was said to receive about 1,000 carts of beans a day during the height of the bean season.

Grades for Manchurian soybeans are set up annually. In December of each year, inspection agents along the South Manchuria Railway and Chinese Eastern Railway lines collect five and one-half pound samples of beans at each receiving point. The samples are sent to the main experiment station of the South Manchuria Railway where each sample is graded by experts of the experiment station under the supervision of the director of the station. After each sample has been graded, the samples are all mixed together and a sample of the mixture graded. A conference is held late in December at the station by representatives of the research division of the South Manchuria Railway, the experiment station, Chinese grain merchants, and commission men. Using the grades of the collected samples and the mixed sample, the committee determines the grades for the coming year, which become effective January 1.

All soybeans shipped through the port of Dairen are inspected and graded by experts of the agricultural research division of the South Manchuria Railway. Soybeans in Chinese grain merchants' storage yards are inspected at points of loading if they are to be shipped to the Dairen storage yards but if they are for Manchurian oil mills they are carried over the South Manchuria Railway lines without inspection.

The inspection and grading of beans are ordinarily conducted in the railway yards by drawing a certain number of samples from one consignment of 350 bags, though in some cases inspection is made in the storage yards of grain merchants and bean oil mills. The method of inspection is based on the appearance to the naked eye and the moisture content as determined by chewing the beans between the teeth, the maximum moisture content allowed being about 13 percent. More scientific methods were under test at different points so that complaints arising from inspection could be eliminated.



Upper: Osier bin for storing soybean seed commonly used in South Manchuria. Corner: Inspecting soybean seed in a railway yard. Left: In formation the Osier bins consists of logs over which is laid matting of kaoliang stalks.

Soybean Fiber

• NOW IN COMMERCIAL PRODUCTION

The first commercial production of a new fiber made from soybeans started in Cincinnati December 2 in a plant which is expected to be of major postwar importance, H. R. Drackett, president of The Drackett Company, has announced. Less than five years ago, this fiber was a $400.00 a pound laboratory curiosity. Present plans call for marketing it at a price which will permit its widespread use in textiles and fabrics.

This new soybean fiber, which is so new it has yet to be named, is as warm as wool. It is resilient, strong and durable, and can be made either moisture absorbent or moisture resistant. It is not a competitor of any other fiber, Mr. Drackett pointed out, but is an entirely new raw material with a growing field of usefulness. It may be blended with either cotton or wool or it may be woven or spun into fabrics. It has already been made experimentally into such products as blankets, felt hats, underwear, hosiery, suitings and upholstery fabrics. This new product may be so controlled as to build into it various desirable characteristics which enable it to meet a variety of requirements.

POST-WAR PLANS

"We plan to increase the capacity of our soybean fiber plant as rapidly as war conditions will permit," Mr. Drackett said. "Production will be stepped up as quickly as we can secure new machinery and equipment to carry on additional manufacturing operations. Actually this may be said to be a post-war plant, reflecting our post-war planning. While carrying on commercial manufacturing we will make a continuous technical study of this new fiber and of new or more efficient manufacturing processes, as well as of potential new uses for the fiber. In this way when the war ends we will be all set to go into large-scale production."

Coincident with the opening of the new plant Mr. Drackett and Robert Boyer, the company's director of research, disclosed for the first time just how this fiber is produced from the versatile soybean:

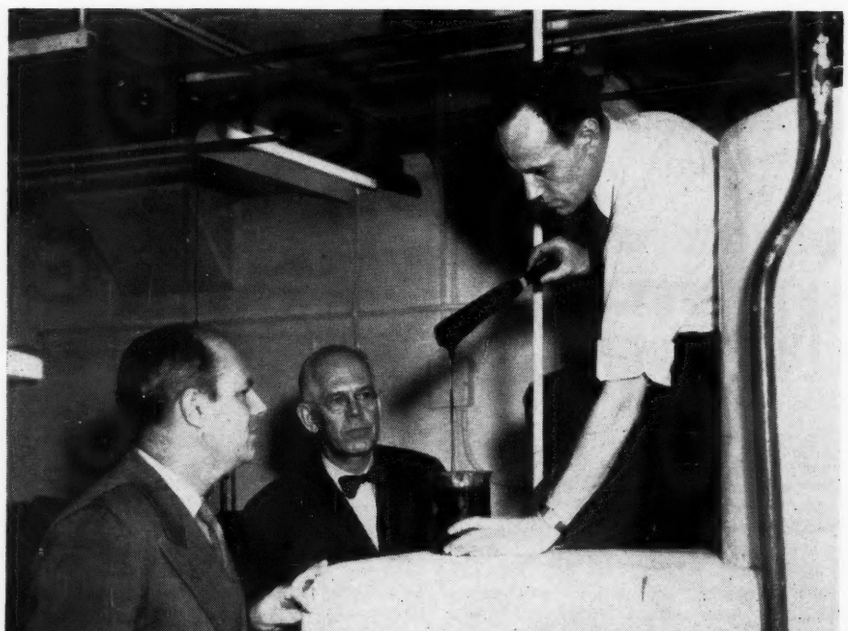
"Although it has required several years of intensive research and laboratory experiment to develop this process it is relatively simple in actual operation," they explained. "From the soybean we first extract soybean oil. After this is done there remains the soybean meal, which we sell in large quantities for livestock feed. Roughly half of this meal is protein. To manufacture our new fiber we remove the required amounts of protein from the meal. This gives us a powder-like product. Through a special process this is liquefied and converted into a mass with a consistency resembling molasses. This liquid is then forced under pressure through very fine platinum spinnerettes from which it emerges as hundreds of thin filaments. These filaments are then given a number of carefully controlled chemical treatments and baths, during which they are stretched and hardened. Finally the fibers are dried and then cut into any desired lengths.

"The end product is a fiber which resembles wool in appearance. In accomplishing this we have effected a variety of chemical changes. By altering and rearranging the molecules we can secure a product which has a variety of characteristics."

The Drackett Company first became interested in soybeans about 1936 when, after a long study of this agricultural product, Mr. Drackett believed it had the promise which attended the development of hydrocarbons several decades ago. He felt that once the oil and protein had been taken from the soybean it would be possible to go on to many other products.

The company's technologists have made many products experimentally from soybeans including plastics, wallboard and paints. Currently the company produces about 70,000 tons of soybean meal annually, and approximately 30 million pounds of soybean oil, which is currently distributed under government allocations.

The viscous fluid shown above is liquefied soybean protein which will shortly be forced through tiny holes in a spinnerette to emerge soybean fiber. Robert Boyer (left), director of scientific research, and H. R. Drackett, president of the Drackett Company, are shown inspecting a batch of this liquefied protein.



Distribution of Protein

By K. J. MALTAS

A. E. Staley Mfg. Co., Decatur, Ill.

In Protein Distribution Panel at Western Grain & Feed Association Convention, Des Moines

In late September the Bureau of Economics of the U. S. Department of Agriculture issued the "1944 Outlook Issue" on the Feed Situation. In this release, the Bureau of Economics estimates that the supplies of all protein feeds for the 1943-44 season will be slightly larger than this past year. However, the number of livestock on farms January 1, 1944, is expected to be greater than a year earlier by some 16 million units. Therefore the supply of protein feeds per animal unit for the 1943-44 season is expected to be about seven percent less than a year earlier. The supply of soybean oil meal this year is not expected to be greatly different than last year's production.

There is a huge surplus of crushing capacity in the cottonseed industry which will be utilized to crush surplus beans — and we hope, *only* surplus beans. Processors in the "Soybean Belt" are rather concerned about the extremely heavy movement of beans which Commodity is shipping out of the Corn Belt states.

The estimated soybean crop in Illinois is about 75 million bushels. Many grain men believe 70 million bushels will come closer to the actual crop. Illinois has a crushing capacity of about 60 million bushels. About 6½ to 7 million bushels will be required for 1944 seed and if 3 to 3½ million bushels are fed on farms — then Illinois probably has no surplus beans over crushing capacity. Commodity admitted that 13 to 15 million bushels had already been shipped out of Illinois so it appears that Illinois processors will again have to secure out of state beans — if out of state beans are available.

In Minnesota and Nebraska a similar situation exists. It is reported that the Mankato, Minn., plant will be compelled to change over from soybeans to flax before many months.

Many people in the feed industry feel that the regular soybean crushing industry should be assured of a full year's supply of beans,

and only the surplus shipped out. Processors in the bean belt concur in this feeling.

Steps have been, and are being, taken to halt the practice of hauling needed beans away from the processing plants in the regular industry and we hope that these steps will be successful.

DISTRIBUTION

There are many rumors in the feed trade as to the kind of a job of distribution that is being done on soybean oil meal this year. Undoubtedly there have been some errors made, but in general I wonder if it hasn't been as good as, or superior to, the distribution of other protein feedstuffs?

Last spring, Mr. Dies, the president of the National Soybean Processors Association, compiled distribution figures on soybean oil meal by states for two previous crop years. Beginning with October 1943, the processing industry through Mr. Dies is submitting figures to the government on soybean oil meal distribution by states, by months. I talked to Mr. Dies recently and asked him how distribution in October compared with October distribution in the two previous years for which he had data. Mr. Dies said, "Distribution by processors in October 1943 followed very closely the pattern of distribution in the past. Meal was widely distributed and in face of the supply and demand situation, the industry did a magnificent job of distribution. Government officials who have had occasion to study meal distribution records have congratulated processors on distribution."

In fairness to Mr. Dies and government officials, I want to say that their information is based on distribution by states and not distribution to individual buyers. Some individuals within a state may have received more, or they may have received less, but the pattern of distribution by states closely followed distribution in former years. It has been the observation of soybean processors that many "so-called soybean oil meal emergencies" are caused by the buyer's inability to secure the amounts of other protein concentrates that he has had in the past — or that he needs — or wants now.

The Soybean Processors Association has worked very closely — I believe as closely as any industry — with government officials. However, it is impractical to expect that soybean oil meal supplies can be stretched to "fill all the holes" caused by lack of other protein supplies.

INDIANA PICKS 1943

Yield Champion

Lawrence Allen, outstanding soybean grower and farmer of Madison County, is the 1943 champion soybean grower in Indiana with a yield of 42.9 bushels per acre in the official yield contest, sponsored by the Indiana Corn Growers' Association, it is announced by K. E. Beeson, Purdue University agronomist and secretary of the Association.

He was honored at the annual achievement program of the Indiana Corn Growers' Association at Purdue January 12 when President E. C. Elliott of the university recognized all crops champions of the state, by awarding them medals and trophies.

Like most contestants, Allen used the early maturing Richland variety planted in 40-inch rows. He drilled 50 pounds of seed per acre May 25, and cultivated his field once with the rotary hoe and three times with the row cultivator. The two-acre plot, on which the yield was measured, was part of a 15-acre field, which was harvested in early October when the beans were carrying less than 10 percent moisture.

Closely pressing Champ Allen for top honors were O. L. Bryant of Allen County, who produced 42.6 bushels per acre of the new Earlyana soybeans in 40-inch rows; Curwen Leaming of Tippecanoe County, with 42.4 bushels of Richlands in 21-inch rows; and Gerald H. Edwards of Miami County, whose bean yield was 42.2 bushels of Mandells, drilled solid.

Other growers who produced more than 40 bushels per acre in this contest, and who received gold medals from the Indiana Corn Growers Association for their achievements include: C. C. Cochard of Hancock County with a yield of 41.9 bushels; Carl Shields, Grant County, with 41.9 bushels; Dwight Sewell, Benton County, 41.5 bushels; and Wendall J. Smith, Grant County, with a yield of 40.6 bushels.

All growers with a yield of 30 or more bushels per acre will receive medals from the Association. The 70 growers who had their yields checked in this contest had an average yield almost double that of the state average of 19 bushels per acre. Most growers used the Richland variety, and most growers planted in rows. Central Indiana growers also used the Dunfield, Mandell and Illini, and Southwestern Indiana growers had yields of the Patoka and Gibson checked.

✶ IN BRITAIN ✶

By ROBIN WALKER

Kyleakin, Fife

Criticism which has been made recently in food trade circles that soya, as issued on government orders to food producers, and particularly to the meat trade as a filler, has proved unsatisfactory, has been refuted this week in Scotland by satisfied users who contend that the failure lies in the method of using rather than in the product itself.

When soya grit was first made a compulsory ingredient some months ago Glasgow butchers hailed it as a satisfactory addition to the list of ingredients and in some cases indicated that they had already used the flour as a binder and filler with satisfactory results. But some English critics condemned the soya as being quite unsuitable.

Commenting on this position one of the most prominent Scottish butchers said, "There's nothing wrong with soya grit. The real point is that not every butcher knows how to use it. When we first tried it out I admit that it was not a success. The first week we knew ourselves that our sausages were not up to standard. But it was our fault and not the fault of the ingredients. After that week, we got down to the job and discovered how to use the grit and now we are putting out an excellent sausage. There is only one thing wrong with the present day sausage and it's not the soya — it's lack of meat."

In this sausage maker's opinion, the secret of successful use of soya lies in its treatment. Too much water in the mixing has been found to be fatal to a successful sau-

(Continued on page 17)

SOY ON NBC NETWORK

The War Food Administration recently went on the air to introduce soy flour and grits, also the Department of Agriculture's new booklet, "Cooking with Soya Flour and Grits" to the American public.

Above you see Dr. Julia I. H. Chen, Miss Nancy Osgood, NBC producer, and Donald S. Payne, chief of the soya products section in WFA.

As a result of the broadcast there were nearly 3,000 calls for the booklet. "Cooking with Soya Flour and Grits," is now being revised to include additional recipes. The new edition will soon be available from the U. S. Department of Agriculture.

MEAL

AS FEEDER demands for greater supplies of protein meals poured into Washington this month, the War Food Administration issued another order setting aside 20 per cent of February oil seed meal production for government-directed distribution into deficit areas.

The government-controlled meal is being rationed to states, first call being given to "critical" areas short of feed because of last summer's drought or severe winter weather, and with preference generally given to areas of heavy dairy and egg production.

Unless feeder demand for meal falls off sharply during the next few weeks, still another set aside order, giving WFA control over distribution of a percentage of March oil seed production, can be expected.

No figures were available on total allocations of January set aside meal as the *Digest* went to press, but the following tonnages of oil meal have been allocated to Corn Belt states up to January 10:

Iowa 4,519, Illinois 3,002, Indiana 1,973, Minnesota 1,654, Missouri 7,267, Nebraska 1,980, South Dakota 810, Wisconsin 3,620, Michigan 2,126, and Ohio 4,160.

Southwestern and Eastern Seaboard states, hard hit by drought last summer, received the bulk of January set aside meal delivered during December, but heavy producing Corn Belt states were expected to receive a greater proportion of January and February deliveries.

Oil seed meal allocations are made by states on recommendations of state and county AAA committees and newly-appointed feed advisory committees weighed against these considerations:

(1) The number and types of livestock.

(2) Tonnage of meal shipped to the states by processors from the remaining 80 per cent of production uncontrolled by government. The "relative shortage" of meal is determined from these shipments, obtained by WFA from regular processors reports.

(3) Other feeds on hand — states short of all feeds are considered in greater need.

(4) Critical areas.

Total supplies of government-owned or controlled oil meal are pooled, and thus fed into the states of greatest need, according to WFA officials. Iowa-processed meal, for instance, may be directed into the drought area of southwest Missouri, while part of Minnesota's output may be ordered into Iowa.

This criss-cross pattern of distribution has been necessary, WFA says, because "every state wanted meal at the same time and the immediate needs of critical areas had to be met first."

On the question of what is being done to discourage farmers from feeding whole or ground beans because of the relative shortage of processed meal, WFA is silent, except to say that farmers are being encouraged to process their beans through an educational campaign and that it "hopes the situation will clear up" as deliveries of set aside oil meal increase.

FLOUR

A re-opening of the hearing on Food and Drug Administration's proposed order which would limit the use of soy flour in white bread to ½ of 1 per cent was considered a likely possibility as *The Soybean Digest* went to press.

War Food Administration has requested W. G. Campbell, commissioner of food and drugs, to re-open the hearing. Mr. Campbell could not be reached for a statement, but Dr. P. B. Dunbar, associate commissioner, said the Federal Security Agency was willing to hold hearings if WFA desires them.

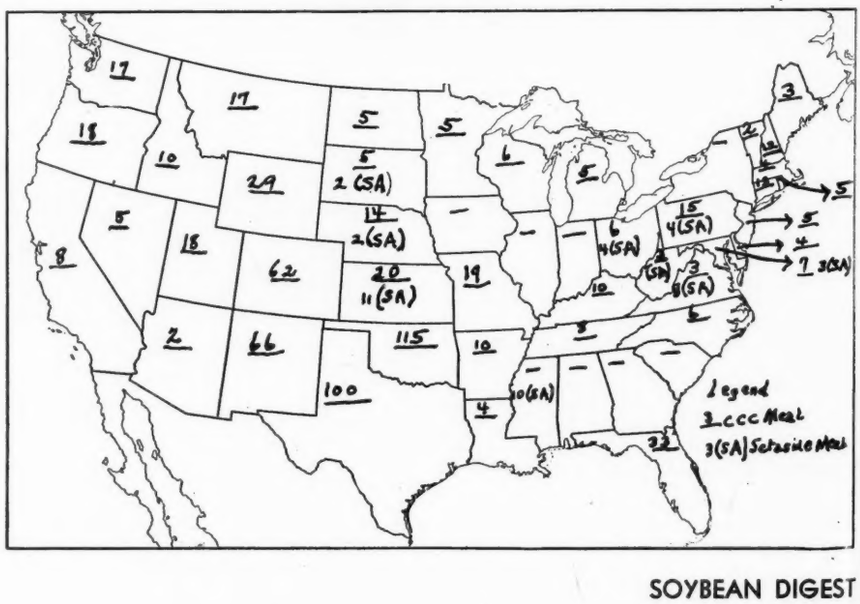
Though no definite decision had been reached early this month, the question has been under consideration for weeks, and the possibility that hearings might be held under authority of WFA instead of Food and Drug were being investigated.

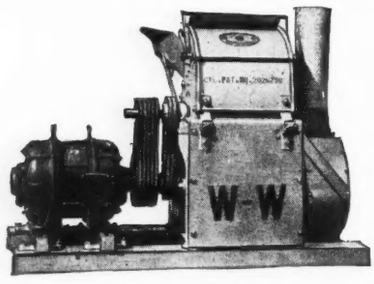
MARGARINE

A 16 per cent increase in the allocation of fats and oils for the production of oleomargarine during the first quarter of 1944 — 148 million pounds against 124.2 million pounds during the last quarter — has been tentatively agreed upon by the Food Requirements and Allocations Committee of War Food Administration.

This is a tentative increase and may be changed slightly before a final decision is reached and the allocation order signed by Food Administrator Marvin Jones.

WFA'S ALLOCATION OF SOYBEAN MEAL DECEMBER IN CARLOTS
(CCC and Set-Aside)





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★ RESEARCH ★

Inoculation Steps Up Protein

Answers to the question of the effect of soybean inoculation on per acre yield of beans, oils and protein were sought by the Iowa Experiment station in a 1942 experiment at the Soil Conservation Experimental Farm in Page County. Results are reported by Drs. A. G. Norman and G. M. Browning in the *Farm Science Reporter.*

The tests were made in southwestern Iowa on sloping land and in a region which had not previously grown many soybeans but has begun to in order to help supply increased war demands.

The results in brief:

1. Inoculation stepped up the yield from about 15 bushels to around 19½ to the acre—31 percent.

2. Inoculation increased the protein content of the soybeans so that with the increased yield of beans, there was nearly a half more protein to the acre—47 percent.

3. Inoculation slightly decreased the percentage of oil in the beans, but because of the increased yield, about 25 percent more oil per acre was obtained.

4. Inoculation left more nitrogen in the

Nodules on soybean root.

bean straw to be plowed under and enrich the soil after the beans were combined.

5. It took about $14 worth of commercial nitrogen fertilizer to get as good yield from beans that were not inoculated as from those growing alongside, which had been inoculated at a cost of less than 20 cents.

6. Beans planted on the contour were ahead in all of the different planting methods tried.

By mid-July the uninoculated beans could easily be picked out because of the lighter color of their leaves, which during August turned almost yellow and were shed at maturity well before those on the inoculated plants.

At $1.50 per bushel the increase in yield of 31 percent obtained was worth $6.90 per acre. Since the cost of inoculant would be less than 20 cents, there can be few more profitable expenditures.

On Soybean Germination

Germination tests conducted on 20-year-old wheat, oats, barley, corn, rye, sorghum and soybeans recently at the Colorado Agricultural Experiment Station by D. W. Robertson, A. M. Lute and H. Kroeger showed that viability of soybeans dropped off about 10 percent on the first five-year period and by the 14th year had reached zero. The drop was exceedingly sharp after the sixth year. As the beans dropped in germination indication of a break-down in the fat content was noted. The Wisconsin Black variety was used. The experiment is reported in the September issue of the *Journal of the American Society of Agronomy.*

—s b d—

PUBLICATIONS

FEED EFFICIENCY IN TERMS OF BIOLOGICAL ASSAYS OF SOIL TREATMENTS, by G. E. Smith and Wm. A. Albrecht, Missouri Agricultural Experiment Station, in *Soil Science in America.*

The authors fed forages and grains grown on different soils with different fertilizer additions to rabbits and sheep.

Rabbits were fed soybean hay on Putnam silt loam where various soil treatments had been used. An extreme potash deficiency had developed where limestone had been applied for some time. There was no evidence of potash deficiency on unlimed soil. Although the differently treated hays varied little in nitrogen, phosphorus and calcium contents, the hay from the plot showing extreme potash deficiency was inferior as feed. There was a marked difference in animal gain caused by this one hay as compared to all the others.

These animal gains indicate that when the potash became a limiting element, the physiology of the soybean plants was altered. The low content of calcium in the potash-deficient beans, which was the lowest for all hays despite the fact the soil had been limed, might indicate the inability of the limed plant to take up certain nutrients. It is possible that organic compounds essential in the growth and development of the young animals were not produced by the plant. If this is true, then it would appear that the application of calcium (or other elements) in excessive quantities without regard for the balance of other essential nutrients might produce crops of lower nutrient value than where no application of any kind was made.

—s b d—

Natural Health Products Co. is now offering a wide variety of soy foods under the brand name of "Soy B Prep." It includes soybeans for sprouting, a vegetable meat, soy milk, breakfast food, two coffee substitutes as well as a full fat soy flour in one-pound packages.

MONIER STRICKEN AT BEAN MEETING

Roy H. Monier, Carrollton, Mo., director of the American Soybean Association from that state, suffered a stroke while presiding at a soybean meeting at St. Joseph, Mo., January 11, according to information reaching *The Soybean Digest* office at press time.

Director Monier had called the meeting to stimulate interest in soybean production in the St. Joseph area. He was taken ill during a talk by Prof. C. M. Helm of the University of Missouri, and was removed to a hospital, where his condition was reported as favorable.

Other speakers included J. L. Cartter, director of the U. S. Regional Soybean Laboratory at Urbana, Ill., and H. L. Dannen, president of Dannen Mills at St. Joseph.

A good crop of soybeans will grow on good land without proper inoculation —but it grows at an extra cost of at least $10 per acre in nitrogen taken from the land.

Neither prior crops nor the presence of nodules guarantee the proper inoculation necessary to take this nitrogen "Free From the Air."

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Fortunately, both raw material supply and bag manufacturing facilities are ample, but the *purchaser* and the *producer* of bags must work together, so that the full productive potentialities may be realized for the good of all concerned.

With this objective in mind, we suggest every possible move toward bag simplification. Your cooperation will speed production and delivery, and enable multiwall bag manufacturers to produce vastly increased quantities.

Some of the factors which tend to retard production are:

1. Excessive ink coverage, or multicolor printing when one or two colors would suffice;
2. [a] Use of tuck-in sleeves when L.C. sleeves would be adequate; [b] use of any type of sleeve if not absolutely necessary;
3. Variations in depth of notch cuts;
4. Thumb-cut, interply pasting, and gusset pasting;
5. Specifying a variety of sizes, composed of differences of one or two inches or less in bag width or length. Standardization of bag sizes might prove practical in your plant operation;

and, perhaps most important, you can ease the situation by:

A. Anticipating your bag requirements;
B. Keeping inventory at a minimum.

There are many cases where any or all of these and other special features are necessary. This is addressed to those users of bags who *can* dispense with any of them in time of war. Every move toward bag simplification [even at some temporary inconvenience to bag users] helps accelerate and increase production of these important containers.

May we suggest that you give consideration to this goal of bag simplification and standardization on present and future orders! Manpower limitations make it impossible for us to call on every customer immediately, but our representative will call to discuss your specific situation as soon as possible. In the meantime, any immediate action on your part will be most helpful.

For St. Regis Paper Company, we pledge a continuance of the complete cooperation of every man and woman in the organization to make every possible effort in the interest of producing good bags in sufficient quantities to meet the needs of Government and industry.

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SOYBEANS . . . and People

Cookies

COOKY recipes are timely these long winter evenings when snacks are especially popular and raids on the cooky jar are apt to be heavy.

Here is a molasses cooky recipe using soy flour. Soy flour increases the nutritive value of these molasses cookies with its body-building protein — valuable for everyone.

Soy flour, like cake flour, will pack in the container. Both must be sifted before measuring or they will be over-measured. It is also a good idea to put the soy flour carefully into the cup by tablespoonfuls, being careful not to let it pack.

Stored in a tight can, these cookies will soften, and in a cooky jar or other container not so tightly sealed they will stay crisp.

These cookies are easy to mix and particularly easy to roll. The dough is soft before it is chilled but after chilling only a little flour is needed on the board for rolling them.

Soy Molasses Cookies

(Makes 4 dozen 2½ inch cookies)

1 cup soy flour
2 cups enriched flour
2 teaspoons baking powder
¼ teaspoon soda
½ teaspoon salt
1½ teaspoons ginger
½ teaspoon cinnamon
¾ cup melted shortening
1 cup molasses
1 egg

Sift soy flour and the enriched flour separately. Measure and sift together with remaining dry ingredients. Combine melted shortening, molasses and beaten egg and blend well. Add sifted dry ingredients gradually, beating well after each addition. Chill dough in refrigerator for 10 to 15 minutes or until firm enough to roll. Divide dough into three portions and roll out each third on a lightly floured board, to one-eighth inch thickness. Cut with a cookie cutter and place on a greased cookie sheet. Bake in a moderate oven (350°F.) for 10 minutes.

Excellent for the cookie jar, but they won't last long.

Waffles

½ cup soy flour
1¼ cups enriched flour
3 tablespoons sugar
2 teaspoons baking powder
½ teaspoon salt
2 eggs
6 tablespoons shortening
1⅔ cups milk

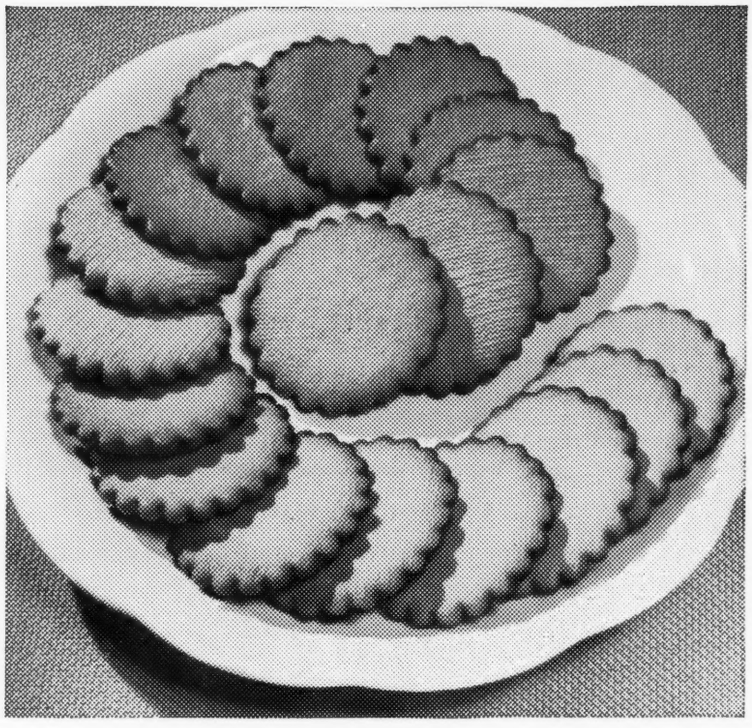
Sift soy flour and enriched flour separately, add sugar, baking powder and salt and sift again. Separate eggs and beat yolks. Add melted shortening and milk and blend. Add flour mixture, stirring only until well-blended. Beat egg whites until stiff and fold lightly into batter. Bake in a preheated waffle iron for three minutes. Waffles are good served piping hot with melted butter and syrup or honey.

Liver Dumplings

(Makes 8 dumplings)

½ pound fresh pork butt
1 pound liver, beef or pork
6 slices bread
¼ cup finely cut onion
1½ tablespoons fat
½ cup soy flour
2 tablespoons chopped parsley
1 teaspoon salt
¼ teaspoon pepper
Dash nutmeg
2 eggs
2 bay leaves

Cook pork in salted water for 40 minutes. In another kettle parboil liver for 10 minutes. Put both pork and liver through a food grinder. Soak bread in water, squeeze dry and also put through grinder. Cook finely cut onions in hot fat and add to ground ingredients. Add soy flour, parsley, salt, pepper, nutmeg and beaten eggs and mix well. Measure stock from pork and add sufficient water to make two cups. Place in a medium-sized kettle, add salt and bay leaves and bring to a rapid boil. Drop dumpling mixture from a tablespoon into boiling liquid. Cover and simmer for 10 minutes.



— A. E. Staley Mfg. Co.

Soy Coated Fried Chicken

(Serves 4)

½ cup sifted soy flour
1 teaspoon salt
¼ teaspoon pepper
1 frying chicken
Fat for frying

Combine soy flour, salt and pepper. Cut chicken into serving pieces. Wash, drain, but do not dry. Roll pieces in seasoned soy flour, and fry in hot fat over medium heat until nicely browned on all sides. Cover and cook slowly until tender, about 35 minutes in all.

Soy flour makes fried foods better looking, better tasting, and more nourishing. It gives chicken, fish, meats and vegetables an even goldenbrown crunchy coating that is appetizing and delicious. Soy flour tends to absorb excess fat and helps to seal in the natural flavor of the meat juices. And of course it adds protein value to foods of every kind.

Soy Golden Carrot Ring

(Serves 5-6)

4 tablespoons fat
1½ tablespoons minced onions
⅓ cup sifted soy flour
1½ cups soft bread crumbs
3 eggs, well beaten
2¼ cups milk
2½ cups raw carrots, grated
1¼ teaspoon salt
Pepper to taste

Heat fat and lightly browned onions. Blend in soy flour. Remove from heat, and stir in crumbs. Beat eggs in a medium sized bowl and add crumb mixture. Add milk, carrots, salt and pepper. Pour into a well greased ring mold and bake in a moderate oven (325°F.) for one hour or until lightly browned and firm to the touch. Turn out on a heated platter and serve immediately.

—s b d—

WORLD NEIGHBOR LUNCHEON

Recently the Ford Motor Co., at Dearborn, Mich., served a "World Neighbor Luncheon," all of soybeans, to home economists, dieticians and women journalists.

The menu was planned to present practical soybean dishes and to "demonstrate Henry Ford's faith in the soybean as an important factor in rehabilitating war devastated countries."

The menu:

Celery stuffed with soy pimento cheese
Canapes of soya crackers and soya butter
Soybean soup
Soya melba toast
Soy cutlets
Soy sprouts creole
Buttered green soybeans
Baked soybeans
Parsley potatoes
Soybean coffee
Soybean milk
Soybean bread, butter and crackers
Soya ice cream
Soya custard
Soya cookies

Do Soybeans Hurt Soil?

● SOME IOWA TESTS

By ENOCH B. NORUM

There is very little doubt but that most north-central Iowa farmers who planted corn on soybean ground in 1942 received larger yields of corn than would have been the case if the field had been in corn the previous year.

ENOCH B. NORUM

That, in brief, is the conclusion we have drawn here at the Iowa Station following some tests to try to find the answer to whether soybeans are hard on the land.

The first test, which we made in 1942, was to find out the comparative yield of corn following soybeans and following a corn crop. Thirteen fields in Story and Hamilton counties were selected. These were all handled uniformly except that in 1941 part of each field was planted to corn and part to soybeans. Then, in 1942, field samples were taken from the corn grown on corn ground and from the corn following soybeans to determine yields and moisture content. Since both parts of the field had been handled alike, the differences in yield were probably the result of the effect of the soybeans grown in 1941.

We confined our study to soils of the Webster series and to Clarion loam. The results of the yields are shown in table 1. On the Webster soils the yield in one field following soybeans was 18.8 bushels an acre more than when corn followed corn. The average was 8.3 bushels more from the land which had been in soybeans the previous year.

On the Clarion loam, as on the Webster soils, all fields yielded more following soybeans than following corn, with one field producing 14.4 bushels more. The average was 9.5 bushels larger for the corn following soybeans.

From what we know of the nitrogen needs of corn, the results are about what would be expected, especially on the Clarion soils. A 60-bushel corn crop may be expected to remove about 60 pounds of nitrogen, whereas a 25-bushel soybean crop may actually add a little nitrogen if the plants are well inoculated. As a general rule one may expect more nitrogen to be available for a crop following soybeans than for a crop following corn.

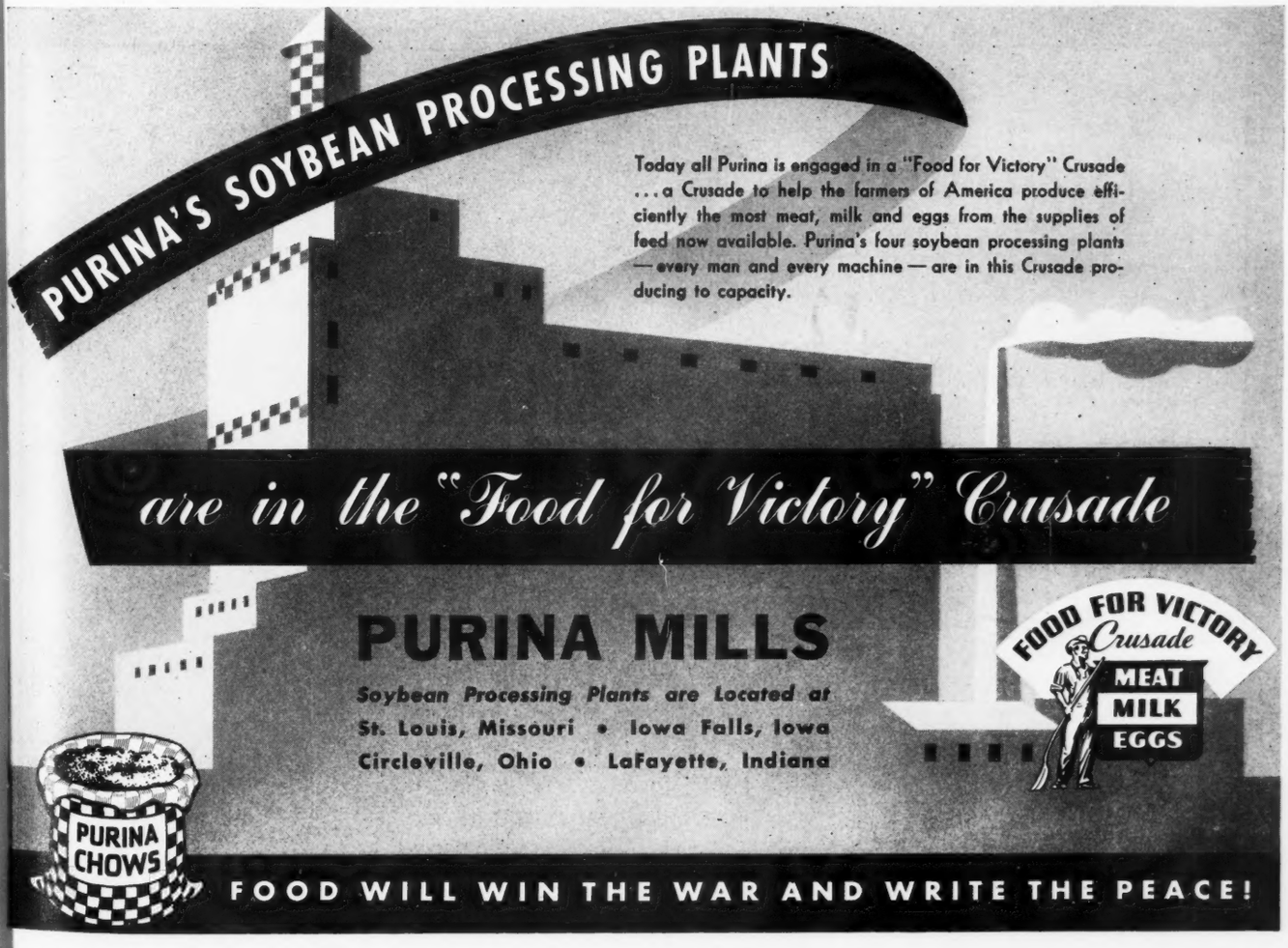
NITROGEN

The importance of nitrogen to corn yields is shown by the results that we get when corn follows clover. In an 8-year test at the Indiana Station, corn following clover yielded 7.6 bushels per acre more than corn following corn. Although the straw was removed from the field, corn following soybeans yielded 2.4 bushels more per acre than corn following corn. If the soybean straw had been left on the ground, a still greater increase would have been expected for corn following soybeans. Corn takes nitrogen out of the soil but adds none; both clover and soybeans should add some nitrogen.

In our tests we were interested in the fact that the Clarion soil which gave the largest percentage increase (field 10) had the most sand and was the shallowest of all the Clarions we used. One would expect such a soil to furnish less nitrogen from native sources than the less sandy and deeper soils. Why was this field out in front? The operator of the farm told us that in 1941 the soybean crop had carried unusually heavy nodule development. We assume that from the extra nitrogen furnished by the soybean nodules came this large increase in corn yield the next year.

Soybeans may affect the yield of crops that follow in other ways besides adding nitrogen — they have a loosening effect which is particularly marked in soils with much clay. We think that probably accounts for some of the increase we obtained on the Webster soils.

In an experiment run for several years at the Ohio Station, soybeans had a beneficial effect on corn, oats and sugar beets that followed. The yield of corn following soybeans was 34.8 bushels an acre as compared with 21.6 bushels following corn and 34.2 bushels for corn following sugar beets. The beneficial effect in this test was attributed


PURINA'S SOYBEAN PROCESSING PLANTS
Today all Purina is engaged in a "Food for Victory" Crusade ...a Crusade to help the farmers of America produce efficiently the most meat, milk and eggs from the supplies of feed now available. Purina's four soybean processing plants — every man and every machine — are in this Crusade producing to capacity.
are in the "Food for Victory" Crusade
PURINA MILLS
Soybean Processing Plants are Located at
St. Louis, Missouri • Iowa Falls, Iowa
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FOOD FOR VICTORY
Crusade
MEAT
MILK
EGGS
PURINA CHOWS
FOOD WILL WIN THE WAR AND WRITE THE PEACE!

to the loosening action of soybeans on the heavy soil used.

In all likelihood more nitrogen is available following a soybean crop than following a corn crop and this is of benefit to corn. The loosening effect of soybeans may be important in increasing yields on heavy soils. In other years, however, differences in rainfall, differences in season and other factors that vary may lead to results different from those we obtained in 1942.

When plowed under for green manure, soybeans, like other legumes, are a soil building crop. When grown for hay, however, soybeans may deplete the soil of some nitrogen and organic matter. In contrast, alfalfa and clover grown for hay will result in the addition of nitrogen and organic matter. The main reason for the difference is that alfalfa and clover roots make up about one-fourth of the total growth of these plants, whereas soybean roots make up only about a tenth of its growth. If grown for grain, a well inoculated crop of soybeans may add a little nitrogen if the straw is left on the ground.

From the standpoint of removing mineral nutrients, soybeans rank about average among the crops grown in the Corn Belt, provided the straw is left on the ground. A 25-bushel crop of soybeans will remove from the soil about the same amount of phosphorus as a 60-bushel corn crop and about twice as much potassium, but only about half as much potassium as a 2-ton crop of clover hay.

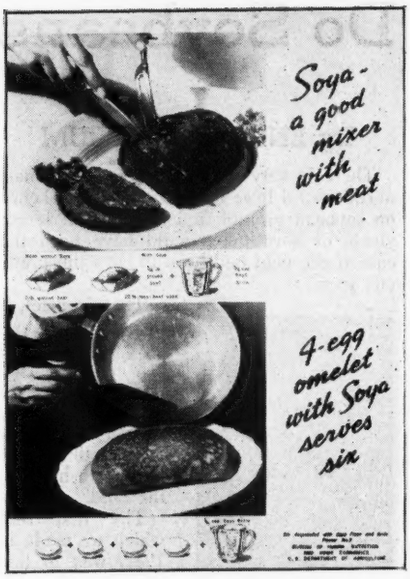
With conditions as they were in 1942, there seems to be little doubt but that corn following soybeans will yield more than corn following corn — at least on these soil types.

TABLE 1. YIELD OF CORN FOLLOWING CORN AND FOLLOWING SOYBEANS

Webster soils (Silty clay loam and loam) Yield per A.			
Field No.	Following corn	Following soybeans	Differences
3	95.8	114.6	18.8
3	75.6	89.0	13.4
5	56.3	61.1	4.8
6	67.7	73.3	5.6
8	49.6	55.3	5.7
11	50.0	56.9	6.9
13	48.5	52.0	3.5
Av.	63.4	71.7	8.3

Clarion Loam Yield per A.			
Field No	Following corn	Following soybeans	Differences
1	63.1	72.1	9.0
2	62.7	67.3	4.6
4	66.0	74.4	8.4
7	70.0	84.4	14.4
8	51.9	59.8	7.9
9	73.8	85.2	11.4
10	50.8	65.1	14.3
12	78.4	84.2	5.8
Av.	64.6	74.1	9.5

Laurel Processing Co. are erecting a 1,600 bushel solvent extraction soybean plant at Laurel, Del., to be in operation about March 1, the company has announced. R. L. Dickerson and H. H. Dickerson are manager and treasurer respectively.



"Get Acquainted With Soya Flour and Grits" is the title of a new set of picture charts prepared by home economists of the U. S. Department of Agriculture to help these useful new foods make friends.

The charts, four in the set, sum up how to use soya and why, telling the story in clear-cut action photographs, sketches, and brief text. The charts can point up talks, discussions, and demonstrations, and serve as starting point for an exhibit on soya products.

Charts are 14½ by 20 inches, printed in brown and peach ink, and sold for 20 cents per set by the Superintendent of Documents, Washingon 25, D. C.

Glidden's

SOYA PRODUCTS
for the
FOOD INDUSTRIES

The properties possessed by soya food products have gained for them a wide usage in many food fields. Soya food products now available include . . . .

. . . For the FOOD MANUFACTURER . . . . A complete line of soya flours of value to the baker, the confectioner, the processor of meats, and in many other food processing fields.

. . . For INSTITUTIONS, RESTAURANTS, and the HOME . . . . Soya Bits and Soyarich Flour, for use in quantity cookery. Durkee's Soya Bits and Durkee's Soyarich Flour — tested and approved in our experimental food laboratory, and ideally suited for the homemaker.

THE GLIDDEN COMPANY

5165 West Moffat Street CHICAGO, ILL.

SOYA PRODUCTS DIVISION

Uniform, Controlled Products Backed by Food Research — Year after Year

Mendota

A New Edible Variety from Wisconsin

By O. B. COMBS

Department of Horticulture, Wisconsin College of Agriculture

Mendota, a new vegetable soybean variety released in 1943, promises to play an important role in the future development of the vegetable soybean processing industry in Wisconsin. Those who have canned or frozen this variety consider it to be of outstanding quality. It is unusually uniform in plant type and maturity, highly productive, and almost entirely free from crinkle mosaic virus. Seeds reach the immature harvest stage about ten days ahead of Bansei.

Mendota was developed by the writer at the Wisconsin Agricultural Experiment Station from a single plant taken from a planting of F. P. I. No. 84668 in the summer of 1937. Plants are 28 to 30 inches high; flowers are purple and open about 40 to 45 days from seeding. The pubescence is grey and the pods contain two to three seeds; 10 to 12 percent of the pods commonly contain three seeds. Mature seeds are medium size, averaging about 2,100 per pound, light straw yellow with a pale hilum and yellow germ.

Immature seeds of Mendota are bright green. Seeds reach the optimum stage for immature harvest in Wisconsin about 90 to 95 days from seeding. Complete maturity is reached in 115 to 120 days. An analysis of mature seeds by W. B. Griem, Director of the State Feed and Fertilizer Inspection Laboratory, gave 33.6 percent protein and 16.12 percent fat. Tests of commercially canned Mendota, conducted under the direction of Dr. C. A. Elvehjem of the University Biochemistry Department, gave 1.66 and 0.9 micrograms of riboflavin (Vitamin B_2) in each cc. of beans and juice respectively. Similar figures for the niacin content were found to be 5.4 and 6.0 micrograms per cc. of beans and juice. No thiamine was detected in either beans or juice.

About thirty bushels of stock seed of Mendota were released to seedsmen, processors, and farmers for increase during the past season. A limited quantity was also grown on the Station farms. There will be a limited amount offered by seedsmen for production in 1944 but the greater portion will be used for further increase in 1944.

MRS. LLOYD PARR

Who says there's no romance in soybeans? The wife of the manager of the farm laboratory division of Albert Dickinson Company holds an edible soybean plant.

IN BRITAIN

(Continued from page 9)

sage, incorporating as all must now do, the required percentage of soya.

As the present experience with soya will probably determine its postwar place in food production and food brand preparation, the vital necessity to insure that it is used efficiently and intelligently cannot be too strongly stressed.

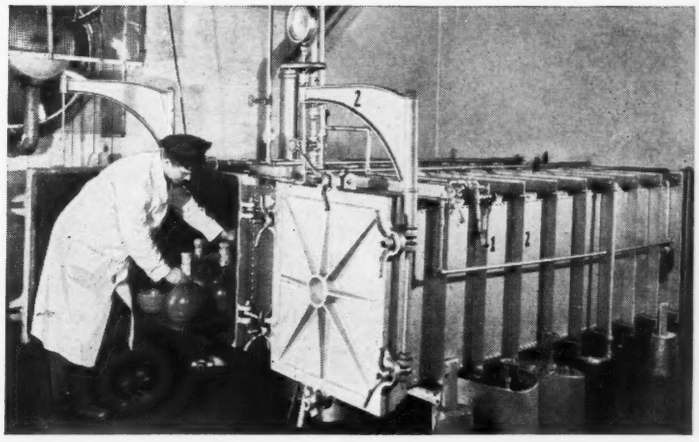
The cure for that is the distribution of all available knowledge to insure that it is adequately used, when it has been produced, prepared, shipped and delivered to the ultimate consumer.

On that intelligent use the future of soya as a human food undoubtedly depends, so far as Britain is concerned.

Fixo tells about: *Sterilizing*

NOD-O-GEN

Equipment



The program of constantly improving Nod-O-Gen requires equipment that's clean . . . . not just "soap-and-water" clean, but bacteriologically clean. Thus, these huge steam chambers — known as autoclaves — are used to sterilize test tubes, flasks, hose, and other equipment for the handling and propagation of Nod-O-Gen bacteria. This is one of the many precautions necessary to prevent contamination . . . . to produce vigorous "bugs" of the best strains . . . . and to build a product in which both grower and dealer have unlimited confidence.

Farm Laboratory Division

THE ALBERT DICKINSON COMPANY

Chicago 90, Illinois Est. 1854

Southern Office and Warehouse: 218 South President Street, Jackson, Mississippi

NOD-O-GEN
THE
PRE-TESTED INOCULATOR

★ GRITS AND FLAKES ★

FROM THE INDUSTRY

Roy K. Ferguson, President of St. Regis Paper Company, has announced the purchase of all logging operations of the West Fork Timber Company, Lewis County, Wash., and the acquisition of perpetual cutting rights to the 109,000 acres of timber land owned and controlled by that company. L. T. Murray, President of the West Fork Timber Company, one of the outstanding figures in the logging industry, will become associated with St. Regis Paper Company. This is said to be the biggest transaction in the timber field in more than 25 years. At a time when the shadow of shortage threatens the entire part that paper and paper containers play in the conduct of the war at home and abroad, this timber will be converted into pulp at the Tacoma, Washington, mill of St. Regis Paper Company and then used for the manufacture of specification kraft paper, largely for conversion into multiwall paper bags for shipment of foodstuffs, chemicals and construction materials to maintain civilian economy at home and for the support of armed forces and Allied civilian populations abroad.

Just as perfect coordination of Land, Air and Sea forces bring Victory on the battle front, so will close cooperation between growers, processers, and feeders win the battle on the food front.

The Soybean Grower does his part when he produces the maximum amount of soybeans and delivers them to the elevator for mills to make food and feed.

The Processor does his part when he makes the Soybean Meal available to feeders.

The Feeder does his part when he buys ONLY WHAT HE NEEDS and feeds it carefully and efficiently to livestock.

All must do their part to win the BATTLE OF THE FOOD AND FEED FRONT.

HOOSIER SOYBEAN MILLS

MARION, INDIANA

FEED PROTEIN WISELY

Deviating from their reputation for the serving of fresh lake trout, Smith Bros. Fish Shanty of Port Washington, Wis., recently set aside fish for a soybean dinner. The occasion was a joint meeting of Rotarian and Kiwanis organizations with their wives as guests. Talks were given by Katherine Busse, assistant state chairman of nutrition, and John Dries of Saukville, American Soybean Association director from Wisconsin. Menu included: broiled Lake Michigan trout, with toasted soybean flakes; Madame Chiang Kai Shek's chop suey; rice and native blue plum; soytash - Queen Mary; hot soy flour muffins; Eleanor Roosevelt's sprout salad; Victory ice cream sundae; Smith Bros. roasted, salted soys in cups; soybean macaroons and soybean spice cookies; coffee.

A laboratory expansion program which will place the company among the nation's leaders in the field of soy products research and development, has been started at Decatur, Ind., by the Central Soya Co., Inc. The program includes the enlargement of the chemical research laboratory, installation of a pilot plant for testing soy products prior to commercial manufacture for human food, the construction of a research bakery for testing and developing recipes and food mixtures, and the installation of a vitamin laboratory for testing vitamin content of food products made with soy flour. Facilities also will be provided for bacteriological study of soy products.

At left is shown the two-pound package of soy flour recently put on the market by Honeymead Products Co., at Cedar Rapids, Iowa. Its appearance is being heralded by extensive newspaper and other advertising. A Honeymead Soy Flour cook book is in the process of completion and will be available shortly.

Dr. J. A. LeClerc, who recently retired as senior chemist in the U. S. Department of Agriculture, announces that he is "available for consultation and research regarding food problems, analyzing, processing, manufacturing, preserving and formula making." A specialist in cereals, grains, soybeans, peanuts, in baking, milling and canning, Dr. LeClerc is interested in preparing special articles on food for various publications. His paper on soy bread given before the American Soybean Association's 1942 convention attracted wide attention.

Dubuque Soy Products Co., Dubuque, Iowa, is being erected by the partnership of Lloyd A. Meyer and E. T. Frith, acting as manager and secretary-treasurer respectively. The firm will operate an Anderson super-duo expeller, with two driers and a filter press, having a capacity of 1,000 bushels daily. The soybeans to keep the plant in operation can be secured within a radius of 30 miles of Dubuque. Shipping connections, with the Illinois Central, Burlington, Milwaukee and Great Western railways, are

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Seed Testing Equipment and Accessories

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Lists and describes over 325 items. Contains not only seed and grain testing equipment but a host of supplies and accessories used in elevators, flour mills, seed houses, food dehydrating plants, etc. Write today.

The STEINLITE One Minute Moisture Tester

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for Your STEINLITE

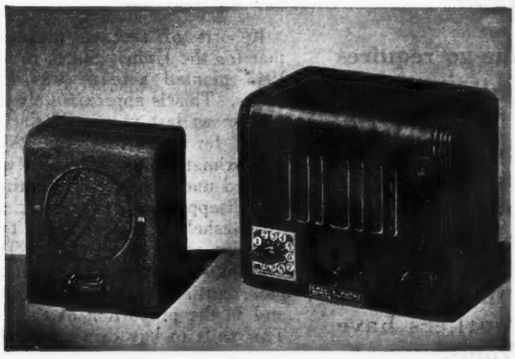
In your plans for next season's processing of soybeans, grain and other products, include an easy to use Steinlite Moisture Tester. Book your order NOW. Permit us to make shipment within a 60 day period just ahead of your busy season. No down payment required.

The Steinlite is FAST, ACCURATE and EASY to USE

It is Fast: Experienced operators can make test in one minute. It is Accurate: Calibrated against official Government oven methods . . . . built by a staff of radio laboratory technicians. It is Easy to Use: Almost as easy as tuning in a radio — operates on radio frequency impedance principle. 10 days FREE trial.

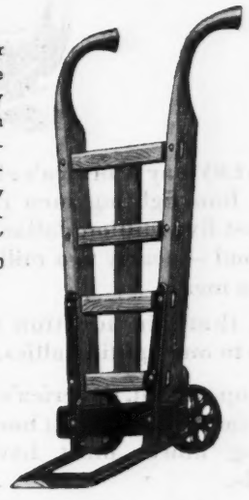
"HEADQUARTERS" *for all Seed Testing Equipment*

Since 1912 Seedburo has been the leading source of laboratory and testing equipment for the seed and grain industries. Every item is built by experienced craftsmen and is rigidly inspected.



No. 237 BAG TRUCK

It is specially constructed for heavy work. The extra large nose of this truck is of heavy wrought iron with extra length bottom straps extending up handles. Steel plate on nose prevents rubbing. Bent plow handles are tough, smooth hardwood 48" long. Wheels, 7½" dia., are of cast iron. Weight 30 lbs. Price $11.00.

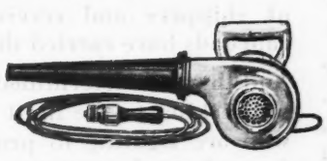


No. 77
6" BAG TRIER

Chromium plated brass, ½" outside diameter at large end, pointed steel tips, leather shield. Price, each $1.25.

CALL-A-PHONE

Most popular of a well-known make of intercommunication system. Private or group direction to all of 5 departments from your master station — without cut-ins. Personnel can contact you. Means two-way speed-up in production. Master station only $34.00. Sub stations each $12.50.



TORNADO BLOWERS

Most powerful and durable portable blowers made — heavy duty for commercial use — to clear out dust from both open and enclosed structural equipment. Excellent for cleaning out over heated or burnt out motors and mechanical equipment. Price $54.45.

Send for Seedburo Catalog No. 143

★ ★ ★ SEEDBURO EQUIPMENT COMPANY ★ ★ ★

629 BROOKS BUILDING **CHICAGO 6, ILLINOIS**

excellent. Milton Rabe, formerly of Monroe, Wis., will be superintendent and production manager.

Samuel Siegel, who has been interested in soybean research for a number of years, has opened the Universal Soybean Laboratory at 16 Fourth St., Lakewood, N. J. Mr. Siegel spent two years in Japan, China, the Philippines, Guam and Hawaii, and was interned for six months in a Japanese prison before his return to this country. Since his return he has given soybean demonstrations before various organizations including one for War Manpower Commissioner Paul V. McNutt and department of agriculture and army officials.

Loren W. Rowell, vice president of Swift & Company for the past 13 years, retired January 1, completing 47 years of service. As head of Swift's fertilizer and feed business, Mr. Rowell is recognized as one of the pioneers in the development of plant and animal food. John Holmes, president, announced the appointment of Porter M. Jarvis, vice president, to direct the company's feed business in addition to his other duties, while C. T. Prindeville has been placed in charge of the fertilizer business.

Missouri Farmers Association sponsored a soybean victory dinner at Mexico, Mo., in December. Speakers included A. F. Stephens, agricultural agent for the Alton Railroad; W. A. Albrecht, head of the soils department of the Missouri College of Agriculture; Maurice Maze, manager of M. F. A. Cooperative Grain & Feed; and F. V. Heinkel, president of the Missouri Farmers Association.

TWO MILLION DOLLAR MEAL

EVERY day America's eight million fighting men consume almost five million dollars' worth of food — nearly two million dollars a meal.

And that's in addition to what goes to our fighting allies.

On top of that, America's 35 million families, working harder and eating more, must have their meals.

That gives you some idea of the job America's farmers are doing.

This food is part of the wartime load the railroads are hauling. Together with war equipment, munitions and raw materials it adds up to 1⅓ million tons of freight to be moved a mile every minute of the day and night.

To keep it all on the go requires that a loaded freight train start on its way every four seconds.

This is a load that no other transportation system in history has been asked to shoulder. It is being carried with little more equipment than before the war. And as with farmers, thousands of skilled railroad workers have gone to the battle fronts.

So far, with the fine cooperation of shippers and receivers, the railroads have carried the load.

And they are determined to keep on backing to the limit the men who are fighting to protect our free American way of self-reliance, enterprise and initiative.

• • •

BUY MORE WAR BONDS

ASSOCIATION OF AMERICAN RAILROADS

ALL UNITED FOR VICTORY

REVISE U. S. SOYBEAN CROP ESTIMATE

The United States production of soybeans in 1943 is now estimated at 195,762,000 bushels by the U. S. D. A. Crop Reporting Board, and is a downward revision from the November estimate of 206,017,000 bushels.

However, the official estimate now places the 1943 soybean crop total five percent above that for 1942. Latest figure announced for the 1942 crop is 187,155,000 bushels, which is well under the 209 millions earlier estimated by the Department.

The downward revision of the 1942 estimate reflects the adjustment made necessary by the beans that remained in the fields when winter came and were partially lost or never harvested. The total acreage planted in 1943 for all purposes is 16,064,000 acres, of which 14,762,000 acres were grown alone and 2,604,000 acres were grown with corn or other crops.

UTILIZATION

Soybeans were planted last spring under generally unfavorable conditions, particularly in the northern states. Heavy spring rains interfered with preparation of the ground, delayed seedings and probably prevented planting the full intended acreage. Throughout the south the hot dry summer weather curtailed growth so that, with low hay production and more livestock to feed, considerable acreage intended for beans was cut instead for hay.

The dry fall and moderate, seasonable frosts were ideal for maturing the crop and aided in early completion of harvesting. The yield of 18.1 bushels per acre is lower than the revised 1942 yield of 18.7 bushels per acre, but is above average. Moisture content was very low.

Reports of acreage utilization indicate that for the United States two-thirds of the 1943 planted acreage was harvested for beans. This is approximately the same proportion as last year. Of the acreage harvested for beans this year, 2½ percent, or approximately 300,000 acres were cut ripe to feed unthreshed, representing a prospective disappearance of approximately 4 million bushels of mature beans to be fed with the vine whole or ground. The most significant shift in acreage utilization was to more cutting for hay, both in actual acres, and in the proportion of the total acreage. This shift to hay came about by reduction

Market Street

We invite the readers of THE SOYBEAN DIGEST to use "MARKET STREET" for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here.

Rate: 5c per word per issue.
Minimum insertion $1.00.

FOR SALE: 1,000 bu. Richland certified soybean seed. Want bids. Edwin Bunkers, Remsen, Iowa.

FOR SALE: Used Steel Storage Tanks, 8,000, 10,000, 12,000, 18,000 gal. And other sizes. Stanhope, Wayne, Penna.

No. 1 in a series of informative articles on the margarine industry, second largest user of soybean oil in the United States.

How a wholesome American food won favor against heavy odds!

A half century ago, margarine may just have been "oleo" to a lot of folks, but today it is a wholesome, good-tasting energy food enjoyed daily by millions upon millions of Americans.

Modern margarine did not attain its important position in the food field the easy way. The margarine industry has, for several decades, fought an uphill battle against prejudice, antiquated laws and burdensome taxation. It also has succeeded in developing a product universally recognized for the high quality of its ingredients, for noteworthy flavor and nutrition, and for rigid sanitary controls under which it is manufactured.

It is on this "bedrock" of merit that margarine has firmly established its place as an indispensable food in the American diet. Margarine has legions of friends who depend on it now, and will continue to depend on it in the future, as an economical source of nutritive food values.

To promote a fuller public understanding of the value and usefulness of margarine and to champion the cause of fair and equitable legislation for this fine, wholesome American food, The National Association of Margarine Manufacturers was formed. And, because the soybean industry is contributing, in ever-increasing quantities, a highly refined vegetable oil that is one of margarine's principal ingredients, we take this means of acquainting you with the objectives of our association and the future outlook for margarine.

THE NATIONAL ASSOCIATION
OF MARGARINE MANUFACTURERS
Munsey Building . . . Washington 4, D. C.

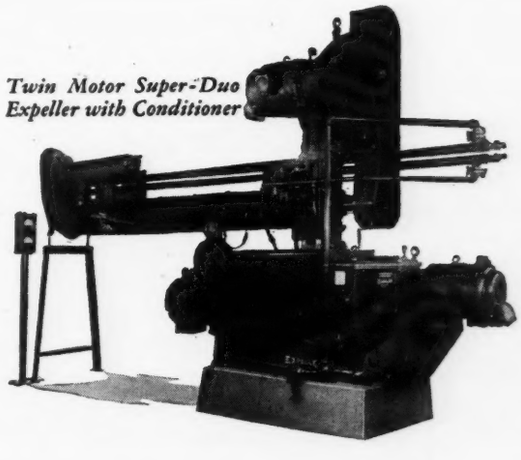
Here's the entire PRESSROOM FORCE *in any Expeller Oil Mill*

Yes, 2 men can handle a battery of Anderson Expellers. The same production from other types of pressing equipment would require from 6 to 20 men. Consider what this means to mills operating with obsolete equipment. Labor is scarce . . . wages high . . . labor turnover is tremendous . . . the labor outlook is exceedingly uncertain. Considering these facts, can you afford to face tomorrow's competition with equipment demanding a large labor force? Can you compete with an Expeller mill with its limited labor requirements? Besides, the Expeller mill can easily press not one, but two or three different crops.

In planning your postwar production, investigate Expellers. Talk with an Expeller Engineer. No obligation involved.

THE V. D. ANDERSON COMPANY
1958 West 96th Street • Cleveland 2, Ohio

Twin Motor Super-Duo Expeller with Conditioner



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We Can Prove It

Of vital interest to growers, wholesale and retail dealers. Only weekly newspaper for the industry. **Up-to-minute production, merchandising and trade news.** Subscription — $2.00 per year. Sample copy on request. Service — free and friendly.

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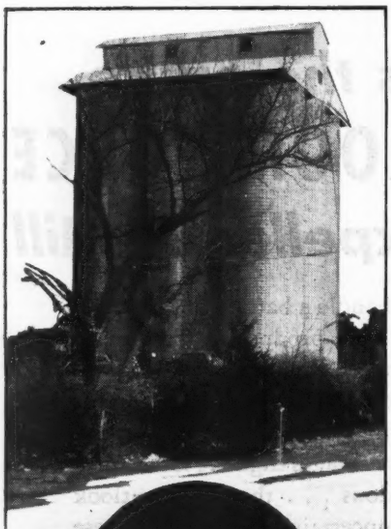

NEFF & FRY
STORAGE
BINS

SOYBEAN
STORAGE

Each month the lowly soybean grows in importance—new uses are found, more storage problems arise.

Storage need be no serious problem to those with proper priority rating—or to any other grower or elevator, in post-war days.

Bins of any required diameter or height. Stave or monolithic.

Send for catalog. Plan now so you can build at earliest opportunity.

THE NEFF & FRY CO.
CAMDEN, OHIO

in North Central States in acres grazed and plowed under, and in the south by finally harvesting for beans a much smaller acreage than intended before the damage from the summer weather.

Total production of soybean hay in the nation was 4,093,000 tons in 1943, a gain over 3,689,000 for 1942, but under the 10-year average.

There was a very marked decline in the practice of plowing under or grazing soybeans in all leading soybean states, but some increase in the south, particularly North Carolina, Tennessee, Mississippi and Arkansas.

SOYBEANS (FOR BEANS)

State	Acreage harvested† Average 1932-41	1942	1943	Yield per acre Average 1932-41	1942	1943	Production Average 1932-41	1942	1943
	Thousand acres			Bushels			Thousand bushels		
N. Y.	6*	22	20	14.4*	16.0	15.0	86*	352	300
N. J.	6*	18	20	14.5*	17.0	13.0	77*	306	260
Pa.	7*	35	45	16.0*	17.0	14.0	114*	595	630
Ohio	256	1,109	1,333	18.1	22.0	21.0	4,808	24,398	27,993
Ind.	424	1,319	1,464	16.4	20.0	18.5	7,066	26,380	27,084
Ill.	1,327	3,239	3,444	19.5	20.5	20.5	26,644	66,400	70,602
Mich.	33	151	103	13.9	14.0	15.5	487	2,114	1,596
Wis.	9	60	68	13.6	13.0	15.5	143	780	1,054
Minn.	25*	273	246	14.7*	13.0	13.5	382*	3,549	3,321
Iowa	367	1,818	2,017	17.4	19.5	19.5	6,642	35,451	39,332
Mo.	110	471	561	9.8	15.0	15.5	1,078	7,065	8,696
N. Dak.	—	4	10	—	12.0	11.0	—	48	110
S. Dak.	—	14	23	—	15.0	11.0	—	210	253
Nebr.	7*	40	82	11.5*	14.0	11.5	76*	560	943
Kans.	14	212	244	8.3	12.0	9.5	136	2,544	2,318
Del.	20	42	39	13.2	15.5	9.0	266	651	351
Md.	10	48	36	13.2	15.5	9.0	138	744	324
Va.	33	115	96	13.0	15.5	11.0	436	1,782	1,056
W. Va.	1	2	3	12.3	12.5	13.0	16	25	39
N. C.	140	268	257	11.1	13.0	9.0	1,560	3,484	2,313
S. C.	8	12	16	6.7	8.0	6.5	57	96	104
Ga.	12	12	13	5.9	7.2	6.5	68	86	84
Ky.	17	82	78	11.4	13.0	11.0	202	1,066	858
Tenn.	19	75	73	7.7	12.0	13.0	146	900	949
Ala.	12	38	44	5.9	6.0	5.5	69	228	242
Miss.	34	203	142	8.7	14.0	12.0	298	2,842	1,704
Ark.	48	217	267	11.2	15.0	9.5	589	3,255	2,536
La.	13	75	41	12.2	12.5	11.5	158	938	472
Okla.	2	9	10	6.8	9.0	5.0	13	81	50
Tex.	2*	25	25	8.6*	9.0	7.5	21*	225	188
U. S.	2,948	10,008	10,820	16.7	18.7	18.1	51,571	187,155	195,762

†Equivalent solid acreage. (Acreage grown alone, with an allowance for acreage grown with other crops.) *Short-time average.

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IN THE MARKETS

● **WAR FOOD ADMINISTRATION PURCHASES.** For Lend-Lease, territorial emergency, Red Cross and other purposes, in pounds.

War Food Administration reports the purchase of 24 million lbs. of soy grits and 99,100,000 lbs. of soy flour, in 100 lb. bags Dec. 18, by far the largest purchases of these items ever made by WFA.

Commodity	Quantity: November	Quantity: January 1, to Nov. 30, 1943	F.O.B. Cost: January 1, to Nov. 30, 1943
Fats & Oils			
Oleomargarine	25,396,300	86,262,902	$13,741,060
Shortening	14,400	61,315,476	9,830,187
Soybean Oil	—	21,783,500	2,890,327
Soybeans	5,600,000	17,104,000	636,912
Soy Flour	—	119,910,000	6,176,517
Soy Grits	—	71,050,000	3,010,338

In addition to the purchases reported above, Commodity Credit Corporation has made available the following for Lend-Lease operations:

Soybeans	—	41,864,000	10,607
Soybean Oil Meal (tons)	—	8,154	1,482,464

● **SOYBEAN INSPECTIONS.** Inspections of soybeans were down sharply in November and totaled 19,547 cars compared with 33,272 cars in October and with 7,951 cars in November 1942, inspectors' reports to the Food Distribution Administration show. The November inspections brought the total for the first two months of the season to 52,819 cars compared with 24,985 cars for the same months of 1942.

The quality of the soybeans inspected in November was considerably lower than that of the October inspections. Only 79 percent graded No. 2 or better compared with 95 percent in these grades in October. Twenty-one percent fell in the lower grades compared with only 5 percent the previous month.

Inspections of soybeans in November included the equivalent of 121 cars inspected as cargo lots, and truck receipts equivalent to about 231 cars.

Period 1943-44	Total Car Lots: Illinois	Indiana	Iowa	Missouri	Ohio
October	16,474	2,901	2,899	3,084	4,200
November	5,933	1,050	1,327	2,408	3,204
	22,407	3,951	4,226	5,492	7,404

● **CORE OIL.** Greater use of linseed oil in the manufacture of core oil is urged by the War Food Administration because of its satisfactory inventory position and its special adaptability for that purpose.

Because soybean and fish oils are in demand for various other essential needs, their use in core oil is denied under Food Distribution Orders No. 29 and 60. Both are sought frequently by the industry for making core oil, used in the manufacture of cores.

Soybean oil, one of the most versatile of all oils, is used primarily as an edible oil in the manufacture of margarine, shortening and cooking oils, but to some extent in the manufacture of protective coatings. Linseed oil, though used in the making of edible products for export, is not as easily adapted for these purposes as is soybean oil.

Fish oil is in immediate demand for use in the synthetic rubber program, for vitamin feeding oil, and for many other important wartime uses, including the manufacture of leather, terne plating, galvanizing, and in the preparation of pharmaceuticals.

● **INDUSTRIAL CONSUMPTION (FDO-29).** FDA recently has been allowing most industrial uses of crude and refined domestic vegetable oils except those prohibited by Amendment 4 to FDO-29, effective November 23. However, it is becoming apparent that the country's inventory position next October will be long on linseed and castor oils, but possibly very short on soybean, cottonseed, peanut and corn oils. All industrial consumers are therefore urged to switch from the four edible oils to castor, linseed or other inedible oils wherever possible in order to help bring the aggregate inventory of fats and oils into better balance.

● **FARM STOCKS.** Farm stocks of soybeans Jan. 1 are estimated at 58,119,000 bushels, representing 29.7 percent of the 1943 production. On Jan. 1, 1943, the first period for which comparable stocks are available for all producing states, farm stocks totaled 88,215,000 bushels, or 47.1 percent of 1942 production. However, stocks a year ago included considerable 1942 production still unharvested at the beginning of 1943. Movement off farms during the past quarter has been unusually heavy, reports the Bureau of Agricultural Economics.

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Official Chemists for National Soybean Processors Association

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● **CCC OPERATIONS.** War Food Administrator Marvin Jones has received a report from J. B. Hutson as president of the Commodity Credit Corporation showing that loans and purchases to facilitate increased war production of food, feed and fibers totaled more than 3.5 billion dollars during the 1943 fiscal year as compared with 1.6 billion in 1942.

The increase represented the fulfillment of commitments to farmers to support prices of crops and livestock products at higher levels than in 1941-42 in consideration of larger costs on an unprecedented volume of food production.

● **STANDARD SHORTENING SHIPMENTS.** By members of Institute of Shortening Mfgrs., Inc.

Week ending December 4, lbs.	9,623,196
Week ending December 11	7,928,353
Week ending December 18	6,945,459
Week ending December 25	5,222,976
Week ending January 1	5,244,474
Week ending January 8	6,402,734

● **MARGARINE PRODUCTION:** Margarine production for October 1943 totaled 57,213,916 lbs. as compared with 34,798,152 lbs. in October 1942. Use of soybean oil in margarine totaled 13,429,991 lbs. for October compared with 9,090,962 lbs. the same period a year ago. 28,538,085 lbs. of cottonseed oil entered into margarine in October 1943. These are Bureau of Internal Revenue figures.

● **STOCKS.** Stocks of soybeans in commercial storage in bushels, reported by the Food Distribution Administration Dec. 14, 21,761,597; Dec. 21, 21,701,811; Dec. 28, 21,696,665; Jan. 5, 23,554,586.

GOVERNMENT ORDERS

● **REVISED PROTEIN ORDER (FPO-9).** War Food Administrator Marvin Jones has approved a number of revisions to Food Production Order No. 9. The revised order limits the quantity of protein meal that can be used by mixed feed manufacturers in 1944, and authorizes the Director of Food Production, whenever he finds it necessary, to limit the protein meal held in processors inventories, delivered to buyers, or used in mixed feed during 1944.

The principal revisions from the existing order are: 1. Mixed feed manufacturers are authorized to use for the manufacture of mixed feed no more protein meal than the average so used during the calendar years 1942 and 1943. Whenever he deems it necessary to obtain equitable distribution among mixed feed manufacturers, handlers and feeders, the Director may limit the quantity of protein meal which any manufacturer may use in making mixed feeds during any part of the feeding year.

2. Whenever he deems it necessary, the Director may limit the quantity of protein meal which processors may sell to any class of buyers during any part of the feeding year.

3. No person can accept delivery of any protein meal which, together with his inventory, would exceed the total tonnage needed for manufacturing, sales, or feeding, according to the following schedule: all vegetable protein meal, 30 days' requirements. Ranchers who must lay in larger supplies and small dealers who customarily buy in carlots or in quantities of not to exceed 2,000 pounds, are exempted.

4. In accordance with the provisions of Food Production Order No. 9, Revised, the Director of Food Production issued an order effective immediately requiring for the delivery of any protein meal in New Mexico and designated areas of West Texas, a statement approved by a member of the County Agricultural Conservation Committee or by the Administrative Officer of the County Agricultural Conservation Association. Effective December 27, 1943, the areas for which approved statements are required for the delivery of protein meal include Oklahoma and the entire state of Texas.

One-half of the soybean meal made by the southern processors from northern soybeans furnished by Commodity Credit Corporation is being distributed by the trade in the usual manner. To meet critical needs in deficit areas the remaining half of the meal made from beans furnished by Commodity Credit Corporation is being distributed through Agricultural Conservation Committees.

● **FEBRUARY OIL MEAL SET-ASIDE.** Processors have been ordered to set-aside 20 percent of their February production of oilseed meal for directed distribution to areas designated by the War Food Administration.

The set-aside order, second to be issued under Food Production Order No. 9, pertains to cottonseed, soybean, linseed and peanut oil meal, cake or pellets. In announcing the order the WFA requested the voluntary cooperation of oilseed processors in making quantities of protein meal to be set-aside during February available for directed distribution during January. Such meal will be credited against the February set-aside.

Processors can sell or deliver set-aside oilseed meal only to holders of a Certificate of Designated Buyer, issued by the State or County Agricultural Conservation Committee.